

Title (en)

Surface waveguide having a tapered region and method of forming

Title (de)

Oberflächenwellenleiter mit konischem Bereich und Verfahren zur Herstellung

Title (fr)

Guide d'ondes de surface ayant une région conique et procédé de formation

Publication

**EP 2720073 A2 20140416 (EN)**

Application

**EP 13188394 A 20131011**

Priority

US 201261712587 P 20121011

Abstract (en)

A method for forming a waveguide (200) having a thin-core region, a thick-core region, and a transition region of tapered thickness between them is disclosed. The method comprises forming a lower core layer (214) of a first material on a lower cladding (212), forming a thin central core layer (216) of a second material on the first core layer (214), forming an upper core layer (218) of the first material on the central core layer (216), and etching the upper core layer (218) in an etchant such that it is removed from the thin-core region and its thickness monotonically changes from its as-deposited thickness (t4) to extinction across the transition region, where the central core layer (216) protects the lower core layer (214) from exposure to the etchant.

IPC 8 full level

**G02B 6/14** (2006.01); **G02B 6/30** (2006.01)

CPC (source: EP US)

**G02B 6/14** (2013.01 - US); **G02B 6/305** (2013.01 - EP US)

Citation (applicant)

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- US 7142759 B2 20061128 - HEIDEMAN RENE GERRIT [NL], et al
- US 201213451957 A 20120420
- "Spotsize converters for rib-type silicon photonic wire waveguides", PROCEEDINGS OF THE 5TH INTERNATIONAL CONFERENCE ON GROUP IV PHOTONICS, 17 September 2008 (2008-09-17), pages 200 - 202
- "Low loss shallow-ridge silicon waveguides", OPTICS EXPRESS, vol. 18, no. 14, 2010, pages 14474 - 14479
- "Low-Loss Compact Arrayed Waveguide Grating with Spotsize Converter Fabricated by a Shadow-Mask Etching Technique", ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE (ETRI) JOURNAL, vol. 27, no. 1, 2005, pages 89 - 94

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CN111656263A; CN107111169A; EP3686657A1; EP2942652A1; US9939582B2; WO2016102693A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

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DOCDB simple family (application)

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